

Effective piano pedagogy: A study of teacher perceptions

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This study investigated perceptions of a variety of educators on teacher behaviours and music skills relevant to piano pedagogy. Research was conducted nationally across all states through purpose-designed questionnaires ($N = 107$), completed by beginner (early-career) piano teachers, lecturers and experienced qualified piano teachers with follow-up interviews ($N = 27$). This research addressed effective piano teaching skills and undergraduate pedagogy degree issues such as practicum, technique, piano methodologies, mentorship, and teacher training procedures.

Results indicated that most lecturers and qualified studio teachers agreed on the application and efficacy of pianistic technique as an essential component of piano teaching. Most respondents perceived a holistic approach to technique and student-centred learning techniques as vital elements of effective pedagogy practice. All three sub-groups nominated: (a) patience; (b) an ability to motivate students; and (c) employing a positive approach to teaching, to be the most essential teacher characteristics in effective piano pedagogy. Many qualified teachers noted having very little or no actual past specialised pedagogy training. These findings contribute to existing research into teacher perceptions within a framework of instrumental pedagogy.

Introduction

The development of teacher education is founded on the understanding and application of the many kinds of knowledge and skills required for effective teaching. Clearly, the knowledge, skills and attitudes required for optimal teaching are not something that can be completely developed in a single course, degree or diploma. “To successfully prepare effective teachers, teacher education should lay a foundation for lifelong learning” (Hamerness, Darling-Hammond & Bransford, 2005, p. 358).

Considering the length of the training period available for preparing most piano teachers (e.g. for a music diploma or undergraduate music degree) and the practical curricular limitations, decisions should be made regarding what content and strategies are most useful for early career teachers to be able to learn and reflect upon their own practice. Prospective and beginner teachers can draw insight from experienced educators in addressing the multiple challenges of teaching and learning practices. The experienced pedagogue is responsible for student learning over an extended period of time. The product of this process is ultimately the opportunity to

construct, test, revise, experiment on teaching skills and behaviours in a genuine one-to-one situation. Further, over time, there is more possibility of prioritising the important skills and behaviours based on proven effectiveness.

There appear to be few local case studies regarding the nature of music skills and teacher behaviours and how they are perceived as effective by instrumental teachers in a range of settings. Present research treatment of piano teacher skills and behaviours and pedagogy course trend analysis (music education vs. instrumental pedagogy) are few and far between. Preference is given: to the study of the mechanics of piano playing, philosophy on the art of piano teaching, keyboard methods literature and repertoire analysis, explorative activities at the piano, and the neglected musical skills experienced in the day-to-day teaching of studio piano teachers. Gordon (1995) addressed the fundamental issue of the need for professional pedagogy training that involves a holistic approach:

Young musicians who are studying at institutions which offer course work in pedagogy may be able to integrate their images of performing and teaching into one concept. But, too often even in these schools, faculties are divided into “performance” teachers and “pedagogy” teachers; course work between the two areas is seldom cross-referenced or coordinated; teaching effectiveness is not scrutinized or tested with the same vigor as performance prowess; and often there remains a feeling of division between the two areas... (pp. 5-6).

In an effort to help undergraduate pedagogy students develop the skills and behaviours that would best ensure success during the early years of teaching, expert teachers and university lecturers may need to consider: (a) the musical skills and characteristics that experienced practitioners perceive to be most important to effective teacher practice; and (b) those skills and teacher characteristics that different teachers perceive to be valuable for success. Cassidy and Madsen (1987) suggested that training can be effective in changing undesirable behaviours in undergraduate music students who already possess competence in the subject matter. Thus, it would be useful to consider the voice of both the expert and the novice.

Rationale

In her own teaching, the author has considered and reflected upon the degree to effective practice is distinctly unique to the piano pedagogy setting. On a daily basis, teachers confront a range of complex decisions

whereby they rely on many different kinds of knowledge and judgment. The knowledge of learning and performance are necessary in allowing teachers to make valid judgments about what is going on in the piano lesson and what strategies may be helpful.

The Australian Oxford Dictionary describes the term ‘effective’ as “having a definite or desired effect [results], efficient...” (p. 417). Throughout the literature on teacher effectiveness, research has shown that “active engagement in subject matter relates significantly and positively to student attentiveness and achievement” (Cassidy, 1990, p. 172). Madsen and Geringer (1989) classify three broad components of effective music teaching important for the preparation of future teachers: personal delivery style; knowledge and accuracy of academic/ musical content; and classroom management skills. Additionally, Teachout (1997) showed that both pre-service and experienced teachers rated personal skills and teaching skills as considerably more important than musical skills validating the need for practical teacher training degree components.

In recent years, some interesting studies have addressed case study design on: alternative models of delivery in piano teaching (group learning) and dimensions of learning enhancing outcomes (Daniel, 2005; Fisher, 2006; Foo, 2005); experienced teacher perceptions of effective teaching (Jayatilaka, 2005); accreditation procedures (Gwatkin, 2009; Power, 2003); and instrumental teacher education and student learning behaviours (Carey, 2005; Duke, Flowers & Wolfe, 1997; Fredrickson, 2007; Parkes, 2005; Yourn, 2000; Zhukov, 2004).

Jayatilaka (2005) showed teacher-student rapport as the overriding and fundamental aspect of piano teaching effectiveness in the majority of practicing piano teachers in Western Australia. Zhukov (2004) analysed the instrumental music lessons of *master* teachers (lecturers) of advanced students (piano, strings, winds) in Australian conservatoriums in a small sample. Her results recognise the importance of techniques within a universal understanding of teaching and learning styles, methodology, and student behaviors of instrumental lessons. Zhukov (2004) and Sang’s (1987) results indicate that the teacher’s ability to demonstrate and the degree of its use in instrumental music lessons has a positive effect on student performance.

The research into effective instrumental pedagogy characteristics has adopted a broad approach, evident by a high dependency on classroom teacher training studies across many music education and pre-service teacher categories (e.g. Ballantyne & Packer, 2004; Campbell & Thomson, 2007). Further, there are few context-driven studies investigating recent

pedagogy degree trends and piano teaching competencies, skills, and behaviours assessed by both early career (or pre-service) and experienced teachers. Therefore, further research into this possible relationship is recommended as one-to-one music teaching employs teaching strategies that are unique to that setting (Uszler, 1992).

Research aims

The goal of this study was to determine effective teacher behaviours and music skills relevant to piano teaching as perceived by a range of Australian piano teachers:

- (a) beginner piano teachers or undergraduate teacher trainees¹ (UTT);
- (b) experienced (qualified) piano studio teachers (QF); and
- (c) tertiary lecturers involved in piano pedagogy training programmes or piano lecturers (PL).

Any notable similarities or differences between the three sub-groups and their perceptions were also considered². Research was conducted nationally across all States and Territories in Australia.

Methods

Design

Both qualitative and quantitative methods were selected to answer the research questions as a useful form of inquiry (Dawson, 2002). This approach, also known as *triangulation*, was useful in order “to counteract the weaknesses in both qualitative and quantitative research” (Dawson, 2002, p. 20). A number of data types were adopted to ensure that comprehensive results were obtained. To achieve this, the views of piano pedagogues in a series of different teaching settings were investigated (in order to confirm or

¹ This usage may also refer to a ‘pedagogy student’, as applied to the tertiary setting. This being, (a) an undergraduate piano teacher trainee who has completed the pedagogy and/or supervised training components of an undergraduate music degree or diploma; and (b) a tertiary student who may be doing some form of piano pedagogy even within an instrumental pedagogy degree component. Such terminology was viewed as the most useful strategy in the recruitment of tertiary piano students, student teachers (teacher trainees), and early career piano teachers who may also study piano performance or instrumental pedagogy degree components.

² As this was a two-pronged approach this study also investigated any current emerging undergraduate pedagogy degree trends or exclusive programme components relevant to piano pedagogy.

triangulate; Denzin, 1970) using a questionnaire and semi-structured interview.

During 2006, through ongoing university web page perusal and lecturer communications across all States, it was found that few tertiary institutions offered piano pedagogy components or subjects within larger, traditionally inspired undergraduate music degree offerings and diplomas (BMus, DipMus, BMus Piano Pedagogy qualification). In many cases, there was an evident emphasis on instrumental/vocal pedagogy degrees and/or broad classroom-based music education degrees.

Participants and recruitment

The questionnaire was sent to all Australian universities listing some form of undergraduate music teaching degrees³ (i.e. instrumental pedagogy, piano performance major and education). This was useful in obtaining a larger more representative (accurate) population sample due to the ambiguous nature of pedagogy degree usage in Australia. The lecturer questionnaire was distributed to all relevant tertiary educators involved specifically in the piano area.

Lecturers were asked to assist in determining the approximate number of their teacher trainees in the area of piano pedagogy or piano majors. All lecturers assisted in this process according to their information on class numbers and subtle differences in degree programmes (i.e. probability sampling; Fogelman, 2002). Nonetheless, experienced teachers' addresses were located from music teacher association web pages, piano accompanist guilds' pamphlets, and relevant contact persons from each State. Random sampling was performed as a reasonable cut-off point for questionnaire distribution.

Approximately 340 questionnaires were distributed during early to mid-2006 with an assumed uneven sub-group distribution. Teacher trainees (131), qualified teachers (172) and lecturers (42) were targeted in the main study. Questionnaire and interview respondents were made aware that participation was voluntary and assured by the researcher and in documentation that all responses would be kept strictly confidential. Ethical clearance for the study was granted by the University of Queensland (April 6, 2006).

Survey instruments

³ This included some institutions which offered undergraduate music degrees as well as Diploma of Music qualifications which involved distance learning.

A questionnaire⁴ was purpose-designed for all piano teacher sub-groups. The three questionnaires were similar in form, varying only to suit the specific setting of each group. Specifically, the questionnaire sought data on: general demographic information; staff allocation; teacher attitudes on effective teaching (skill acquisition); methodologies; teacher experience/background; current and past degree issues and their thoughts and philosophies.

Rating in some of the skills and teacher behaviours was considered an important way of teasing out the perceptions, beliefs and pedagogical experiences of each participant. A combination of an closed and open-ended questioning was used, making it possible to both quantify some responses and find out what respondents really think about more complex issues (Dawson, 2002).

This questionnaire was developed using some of the key points featured in Teachout's (1997) usage of *personal*, *musical*, and *teaching* skills (list of 40 intended for classroom teachers). Despite the obvious difference in teaching settings, there was some overlap with the instrumental pedagogy context; in particular, the teaching skills which were considered somewhat universal in function (Smith, 2007, p. 9; Swanwick, 1996, pp. 241, 243).

In this study, interviews aimed to complement the questionnaire tool by providing an opportunity to ask both structured and spontaneously generated questions. They were used to tease out individualised experiential information (not predefined) on participant opinions and beliefs (via open-ended discussion). As interviews were not central to the research study, *opportunity sampling* was employed based on respondent availability (Wragg, 2002) and the data emerging from the questionnaire's consent form. The general sampling distribution was projected at approximately 30 participants with at least three per State in each sub-group.

A pilot test was performed in order to canvass a variety of piano educators in a range of settings. The purpose was to: (a) pretest some members of the intended populations; (b) analyse some of the data emerging from initial testing of the questionnaire and interview; and (c) identify any problems, skipped or unclear (misinterpreted) questions.

⁴ The questionnaire consisted of 4 main sections over 9 pages in length.

Data Analysis

Analysis of study data included assessment of all three sub-population questionnaires, interview transcripts, email communications and any relevant interview field notes made during the data collection and analyses process. Appropriate statistical analyses were performed on the questionnaire data⁵.

Results

Response Rate

One hundred and seven respondents (31%) of 342 possible participants completed the questionnaire; 66 were experienced piano teachers (62%), 22 undergraduate piano teacher trainees (21%) and 19 piano pedagogy lecturers (17%). This is acceptable in large-scale surveys (Fogelman, 2002). An uneven distribution was expected based on generated lists in consultation with key groups, music teacher associations, Bureau of Statistics data, and perusal of web music degree offerings (including Bartle, 2000). State distribution data indicated a high response rate from Queensland, New South Wales, South Australia, and Victoria.

Demographic information

Data showed that the majority (82%) of undergraduate piano teachers trainees surveyed were in full-time study. Figure 1 demonstrates a strong preference for piano pedagogy degree components being undertaken by teacher trainees within the traditional model of the Bachelor of Music degree ($n = 13$).

⁵ This included: median and range for unevenly distributed variables; Chi Square analysis or Fisher exact test for comparisons between population groups; Mann-Whitney u test for comparison of continuous variables between 2 groups. A p value of <0.05 was considered statistically significant. Content analysis (Burns, 2000) was applied to interview data providing a flexible framework for questionnaire themes as well as new issues.

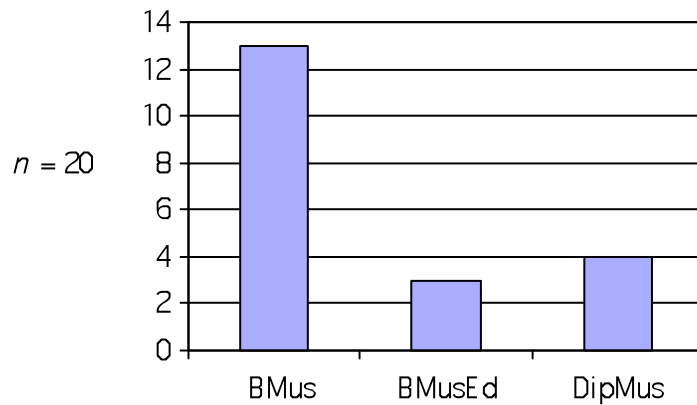


Figure 1. UTT Degrees being undertaken or completed with some piano pedagogy emphasis

Likewise, the majority of tertiary piano lecturers or lecturers involved in some form of piano pedagogy ($n = 18$; 95%) indicated that their institution offered a Bachelor of Music degree with some piano pedagogy emphasis. Additional lecturer data showed the most commonly found qualifications with some piano pedagogy emphasis were: Bachelor of Music (BMus), Bachelor of Music Education (BMusEd) and the Diploma of Music (DipMus).

Most of the qualified piano teachers ($n = 64$; 97%) in this study indicated an involvement in teaching piano in the studio environment or individual tuition with approximately 27 years in full-time or part-time teaching experience (*median 27, range 2-60*). Information provided by qualified teachers on their student population showed a range of 4-91 (*median 30*) students being taught and an approximate pupil age group ranging from 3-94.

Effective skills and behaviours

Questionnaire results showed that pianistic technique was perceived an essential music skill by more experienced piano teachers and lecturers than by undergraduate teacher trainees (Tables 1-3, see pages 8-10). A larger proportion of lecturers (40%) perceived this skill as a more valuable component of effective teaching.

Table 1. UTT Assessment of important music skills and knowledge in effective piano teaching

$n = 22$

SKILL	Not Important	Somewhat Important	Important	Very Important	Essential
a. Technique & posture	0	0	4	5	13
b. Knowledge of repertoire	0	1	5	8	8
c. Accuracy of musical content	0	0	5	9	8
d. Proficiency on solo instrument	0	1	7	7	7
e. Ensemble & performance practice	0	5	10	4	3
f. Student centred learning techniques	0	1	2	7	12
g. High level of musicianship	0	0	6	7	9
h. Effective vocal skills	0	11	7	3	1
i. Goal oriented lesson planning	0	3	8	7	4
j. Clear presentation of lesson goals	0	4	8	7	3
k. Knowledge/use of pedagogy methods	0	3	11	6	2
l. Applying sight-reading & aural	0	1	7	9	5
m. Maintain lesson pace, task time	0	3	4	10	5
n. Composition/ arranging skills	3	13	4	2	4
o. Improvisational techniques	3	8	6	4	1
p. Knowledge of <i>Alexander, Feldenkrais</i>	4	10	5	3	5
q. Teaching & learning strategies	0	0	9	8	5
r. Adapt to varied abilities/ aged students	0	1	2	7	12
s. Appropriate speaking skills	0	2	4	10	6

**Table 2. QF Assessment of important music skills and knowledge
in effective piano teaching**

$n = 66$

SKILL	Not	Somewhat	Important	Very	
Essential	Important	Important		Important	
a. Technique & posture	0	0	5	9	52
b. Knowledge of repertoire	0	2	12	16	36
c. Accuracy of musical content	0	0	8	17	40
d. Proficiency on solo instrument	0	5	18	18	25
e. Ensemble & performance practice	0	13	22	15	16
f. Student centred learning techniques	0	2	8	21	35
g. High level of musicianship	1	3	11	18	33
h. Effective vocal skills	9	18	23	11	5
i. Goal oriented lesson planning	1	3	22	18	22
j. Clear presentation of lesson goals	0	1	20	18	27
k. Knowledge/use of pedagogy methods	1	8	15	20	22
l. Applying sight-reading & aural	0	6	9	25	26
m. Maintain lesson pace, task time	2	2	17	22	23
n. Composition/ arranging skills	7	19	25	11	4
o. Improvisational techniques	5	19	23	13	6
p. Knowledge of <i>Alexander, Feldenkrais</i>	7	16	19	21	3
q. Teaching & learning strategies	0	1	7	19	39
r. Adapt to varied abilities/ aged students	0	2	6	13	45
s. Appropriate speaking skills	2	4	11	23	26

Table 3. PL Assessment of important music skills and knowledge in effective piano teaching

$n = 19$

SKILL Essential	Not	Somewhat	Important	Very	
	Important	Important		Important	
a. Technique & posture	0	0	1	3	15
b. Knowledge of repertoire	0	1	1	7	11
c. Accuracy of musical content	0	0	2	8	8
d. Proficiency on solo instrument	0	1	7	6	5
e. Ensemble & performance practice	0	2	6	6	5
f. Student centred learning techniques	0	2	3	8	6
g. High level of musicianship	0	1	3	6	9
h. Effective vocal skills	3	6	6	2	2
i. Goal oriented lesson planning	0	3	4	6	6
j. Clear presentation of lesson goals	0	1	5	6	7
k. Knowledge/use of pedagogy methods	0	4	3	6	5
l. Applying sight-reading & aural	0	1	7	4	6
m. Maintain lesson pace, task time	0	0	6	5	8
n. Composition/ arranging skills	5	6	7	1	0
o. Improvisational techniques	4	9	5	1	0
p. Knowledge of <i>Alexander, Feldenkrais</i>	1	6	8	3	1
q. Teaching & learning strategies	0	1	4	7	7
r. Adapt to varied abilities/ aged students	0	1	4	3	11
s. Appropriate speaking skills	0	1	8	6	4

N.B. Skill (c); PL 9 ($n = 18$),

Skills (k) and (l); PL 7 ($n = 18$)

The most important two top rated skills in the questionnaire by teacher trainees and qualified teachers for successful piano teaching were student-centred learning techniques and an ability to work with students of varied abilities and ages. The value of student-centred learning techniques, commented on by more trainees and qualified teachers than lecturers, was a crucial finding indicating that beginner and experienced teachers were

more assured of the essential nature of a one-to-one teaching approach which caters for individual student differences. Equally, interview data confirmed questionnaire results that many teacher trainees believed student-centred learning techniques to be more important than other music skills (Interview UTT 3, page 11):

I think remembering that when you teach, the most important thing is the student and as important as it is ... [in] developing our own skills and continuing to develop as musicians...I do all of that because I want the student to play the best they can. Children are individuals so each of them have their [own] needs and obviously they are not all going to require the same type of piece, the same tutor book or even the same approach (UTT 3).

Experienced teachers and lecturers assigned the knowledge of complementary pedagogical practices (i.e. Alexander, *Feldenkrais*, Taubman approaches) a medium rating of importance. The knowledge and use of different pedagogical methodologies (e.g. Kodaly, Suzuki) was assigned an important rating by these two sub-groups also.

Sight reading and aural skills were not emphasised strongly by a cross-section of piano educators. A concerning finding was the overall low rating given despite being addressed in experienced teacher and lecturer past tertiary study. Most qualified piano teachers (91%) assigned an important rating and felt strongly about this aspect of their teaching.

Improvisation and composition were viewed as reasonably useful skills. In particular, improvisation skills were viewed highly by all sub-groups although not emphasized strongly in their current and past degree training procedures. Lecturers assigned less importance to improvisational techniques, potentially revealing less emphasis on this subject in current pedagogy tertiary training curricula in Australia.

Respondent perceptions of musical skills important in determining effective piano pedagogy were examined in the 3 population groups using a Chi-square test analysis. There was no significant difference between the 3 population groups in the perceived importance of the following skill items: (a) technique and posture ($p = 0.38$); (b) knowledge of repertoire ($p = 0.49$); (f) student-centred learning techniques ($p = 0.66$); (g) high level of musicianship ($p = 0.63$); (o) improvisation ($p = 0.39$); and (r) ability to work with students of various abilities and ages ($p = 0.63$).

Important teacher behaviours

Motivation, patience, creativity, maturity (self-control), and a positive approach to learning, featured highly in the questionnaire data of teacher trainees. Not surprisingly, many considered stress management, frequent eye contact, lesson pace (time management), financial efficiency, and physiological communication, to be less vital factors for effective piano teaching.

The ability to motivate students was viewed as essential by 74% of piano lecturers. Fifty-three percent of lecturer respondents nominated maturity/self-control, maintaining positive student behaviour, and energy/enthusiasm as effective teacher characteristics, with a large proportion highlighting flexibility in teaching as a crucial aspect.

Qualified piano teachers considered motivating students, employing a positive approach, organization, and energy/enthusiasm, to be very important teacher characteristics. Patience and the ability to motivate students were considered essential by the majority of qualified teachers (88%). Further questionnaire analyses revealed significant differences ($p = 0.03$) between the three populations with regards to patience (Table 4).

Table 4. The significance of *patience* as a teacher behaviour, useful in determining effective piano teaching, as perceived by three population groups

	$p = 0.03$		
Grading Scale	UTT $n = 22$	QF $n = 66$	PL $n = 19$
Essential	15	58	11
Very Important	6	7	5
Important	1	1	3

Discussion

This piano-specific Australian survey presented a range of teacher perceptions with discussion on degree issues in which questionnaire items were informed by a qualitative and quantitative study. With comments such as: “my ultimate goal is to perform, but I want to teach as well...” (Interview UTT 1), and:

It would be good to have an actual pedagogy course that is relevant for a private music teacher...I think we can do better...Often the options are performance or education which is the classroom teaching (Interview UTT 3),

the tertiary administrator may consider the complexities of such a system. One might then consider the degree to which this piano pedagogy training or studio preparation is highly specialized, effective, and multifaceted in approach.

The findings presented in this study support results of several studies (Daniel, 2005; Jayatilaka, 2005; Zhukov, 2004) in showing the primacy of technique in terms of lesson content in instrumental music lessons, especially with regards to piano. Interview data confirmed questionnaire results on the value of student-centred learning techniques as important effective skills. These findings support the data highlighted by Teachout (1997) showing student-centred learning as one of the top seven perceived personal, teaching or musical skills (common to American pre-service and experienced music teachers). The data from this study also validates Brand’s (1985) emphasis of student-centredness as an important effective teacher characteristic.

Conversely, sight reading and aural skills were not emphasised strongly despite a large portion of qualified teachers supporting the application of these skills. Questionnaire results showed that some lecturers noted a lack of emphasis of this skill in their current degree, in contrast to Brandman’s (2007) opinions on the importance of sight reading and aural skills included within “an integrated teaching programme” (p. 70).

All three populations regarded composition/ arranging skills and improvisational techniques by assigning a reasonably useful rating. Although many study participants (especially qualified teachers and lecturers) believed improvisation and composition techniques were a useful factor in effective piano pedagogy, these programme elements were considered especially deficient in respondents’ current and past training.

Questionnaire findings showed that both experienced teachers and lecturers viewed patience as an essential teacher behaviour. This is similar to the results of Teachout's (1997) study which showed that patience was perceived as extremely essential by experienced classroom music teachers in contrast to their pre-service teacher counterparts.

Additionally, the ability to motivate pupils was confirmed as important by a considerable proportion of qualified teachers interviewed, with questionnaire data showing similar importance among the three populations ($p = 0.20$). These findings support those of Kohut (1985), who previously addressed the motivation factor in effective music teaching, and Teachout's (1997) where the data showed that both beginner and experienced classroom music teacher groups ranked the motivating of students equal second from a list of 40 skills.

It was found that some teacher trainees viewed a good relationship and rapport with their students as a valuable attribute for piano teachers. This result to some extent supports the findings of Jayatilaka (2005), who showed teacher-student rapport as *the* overriding and fundamental aspect of piano teaching effectiveness in the majority of practicing piano teachers sampled in Western Australia ($N = 312$).

Questionnaire data showed that some lecturers viewed the ability to effectively teach practice strategies as an important additional pedagogy skill, perhaps an indicator of their deep realisation of the internal workings of piano technique and performance preparation skills reiterated by previous research (Daniel, 2006; Hallam, 1998; Jayatilaka, 2005; Speer, 1994; Tannhauser, 1999).

Any survey tool weaknesses were identified and acknowledged prior to the commencement of this study. This was possible through the piloting process ($N = 11$) and detailed editing of the questionnaire. However, in conducting this study, several unpredicted events emerged which undoubtedly influenced the results:

- (a) The unequal spread of the targeted population groups (especially in lecturer and teacher trainee numbers) was a limitation;
- (b) The questionnaire response rate (31%) was considered an acceptable size for validity. One cannot totally exclude the potential influence of volunteer bias on the overall results. The relatively large population sample improved external validity;
- (c) Some problems were experienced in the recruitment of teacher trainees in establishing accurate numbers for questionnaire distribution based on university database information. This was

overcome by contacting university lecturers and administrators for the recruitment process, mindful of privacy laws and access to university databases; and

- (d) The questionnaires and interviews were designed to seek information on the specific opinions of a variety of piano teachers including early career educators. Input from other groups such as parents, school instrumental music staff and some tertiary departmental administrators were not sought.

Reliability and validity in the research design were made possible through triangulation of questionnaire and interview data. Despite the potential population size and interviewer hazards, the use of interviews in this study provided valuable information in conjunction with the questionnaire data results. The piloting of both questionnaires and interviews provided a more meaningful and valid research framework for this study (Patten, 2000).

Conclusions

Chronister (1981) suggested that teachers who are concerned about the quality of learning in their studios are always searching for new ways to evaluate the progress of their students. Further, he emphasised the importance of examining *how* we teach (in Darling Ed., 2005, p. 124). Perhaps this means the transforming of what we do in our teaching, in trying to discover the many ways we can improve the success of our students.

This study attempts to contribute to existing research into pre-service teacher perceptions and piano pedagogy by emphasising the crucial role of pianistic technique, student-centred techniques, repertoire knowledge, teacher patience and an ability to motivate pupils.

Perceptions are indeed valuable as they may influence changes in culture; including confronting challenges in studio pedagogy and equally in tertiary training curricular procedures. Unfortunately, as one lecturer stated, there is still:

The perpetuation of untested traditional models of learning, the jealous protection of inherited approaches...based on the conservatoire tradition, the lack of resources...put towards the area [instrumental/vocal pedagogy]...the constant battle in institutions for those teachers who see the value and importance of this area being basically bad mouthed by people who want to focus...on performance outcomes... (Interview PL 4).

Based on some previous literature (Carey, 2005; Daniel, 2005, 2006; Gwatin, 2009; Jayatilaka, 2005; Smith, 2001a, 2001b; Zhukov, 2004), the results of this study advocate a further investigation of educator characteristics including piano teacher perceptions in a number of settings. This may include replication and elaboration in similar or different context. Furthermore, additional action-based research and case studies, focus groups and interviews (Dawson, 2002), may be convincing in determining distinct patterns in effective piano teacher skill acquisition within a broad music pedagogy framework.

Richard Chronister (1988) stated:

If we believe that teacher education is worthwhile in *any* field, we must also believe that it is possible to create a learning environment for future and/or current teachers to assist them in gaining necessary skills to become good piano teachers (in Bastien Ed., 1988, p. 242).

It is envisaged that the main findings of this study could assist piano educators in understanding the complexities of skill acquisition as continuously evolving in their own reflective pedagogy practice. These findings may question the extent to which pedagogy programmes in Australia are considered content or discipline specific. Additionally, what are the significant aspects of training that are effective/ innovative in the development of transferable skills, knowledge and understanding appropriate to a wide range of teaching situations? Nelson (2005) suggests a case for examining very closely the way in which teachers are being trained via the standards of tertiary teacher training.

Information regarding the perceived piano pedagogy music skills and teacher behaviours and their level of efficacy is valuable as this may stimulate discussion and dialogue on studio teaching practices and tertiary-related curricular needs. Further research relating to effective piano pedagogy is important as it is related to the multifaceted procedures of music teacher training and the ways in which piano teachers view themselves.

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